

17(12)

SOV/16-59-6-14/46

AUTHORS: Sukhova, M.N., Shnayder, Ye.V., Yerofeyeva, T.V., Zlatkovskaya, Ye.V. and Kuklina, N.P.

TITLE: A Comparative Evaluation of the Efficacy of Measures to Combat Synanthropic Flies Using DDT, BCH and Chlorophos, and the Further Prospects in Destroying These Insects

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1959, Nr 6, pp 66-73 (USSR)

ABSTRACT: Because of the disappointing effects of DDT and BCH in combatting flies in areas where these drugs have been used for a number of years, many authors maintain that the flies have developed a resistance to these agents (Derbenova-Ukhova, Morozova). Further, V.I. Vashkov, Pogodina and N.A. Sazonova maintain that the insecticidal properties of DDT and BCH vary with the climatic factors, the physical and chemical properties of the surface under treatment and the physiological condition of the insects. The present work gives the results of fly-clearance work carried out in different districts of Minsk by the Minskaya gorodskaya dezinfektsionnaya stantsiya (Minsk City Disinfection Station) using DDT, BCH and chlorophos. It was found that the combined use of one drug from

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80V/16-59-6-14/46

A Comparative Evaluation of the Efficacy of Measures to Combat Synanthropic Flies
Using DDT, BCH and Chlorophos, and the Further Prospects in Destroying These Insects

each group (chlorine organic compounds, i.e. DDT, hexachlorane and phosphorus organic compounds, i.e. chlorophos, carbophos) considerably increased the effectiveness of the anti-fly campaign, especially in areas without sewage facilities. Identical results were obtained in all sections of the city. These underlined the need for adequate garbage disposal and proper sanitation and sewage facilities to make the anti-fly measures really successful.

There are: 2 graphs, 1 figure and 7 Soviet references.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut (Central Disinfection Research Institute)

SUBMITTED: March 6, 1958

Card 2/2

SUKHOVA, M.N.; YEROFEYeva, T.V.; GVOZDEVA, I.V.; NIKIFOROVA, N.F.; DOTSENKO, T.K.; DEM'YANCHENKO, R.P.; BIRALO, T.I.; SERAFIMOVA, A.M.; MOSUNOV, V.B.; SAMSONOVA, A.M.; STOROZHEVA, Ya.M.; SURCHAKOV, A.V.

Methods of applying insecticides to control synanthropic flies.
Zhur.mikrobiol., epid.i immun. 33 no.8:15-19 Ag '62.

(MIRA 15:10)

1. Iz Tsentral'nogo nauchno-issledovatel'skogo dezinfektsionnogo instituta Ministerstva zdavookhraneniya SSSR, Mytishchinskoy gorodskoy sanitarno-epidemiologicheskoy stantsii, Kuytyshevskogo instituta epidemiologii i mikrobiologii, Minskoy gorodskoy dezinfektsionnoy stantsii, Brestskoy sanitarno-epidemiologicheskoy stantsii, Tashkentskoy gorodskoy dezinfektsionnoy stantsii i Tashkentskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.

(INSECTICIDES)

(FLIES--EXTERMINATION)

ROZHDESTVENSKIY, V.P., kand. khim. nauk; YEROFYEVA, V.I., mladshiy
nauchnyy sotrudnik; SEMOL'NIKOVA, V.V., mladshiy nauchnyy
sotrudnik

Obtaining hydrogen from the methane-hydrogen fraction of p.
pyrolytic gas. Ispol'. gaza v nar. khoz. no. 2:199-218. '63.

(MIRA 18:9)

1. Laboratoriya khimicheskoy pererabotki gaza Saratovskogo
gosudarstvennogo nauchno-issledovatel'skogo i proyektного
instituta po ispol'zovaniyu gaza v narodnom khozyaystve.

VERNOV, S.N.; SAVENKO, I.A.; SHAVRIN, P.I.; NESTEROV, V.Ye.;
PISARENKO, N.F.; TEL'TSOV, M.V.; PERVAYA, T.I.; YEROFEEVA, V.N.

Some results of radiometric observations at altitudes of
200 to 400 km. during 1960-1963. Kosm. issl. 2 no.1:136-146
Ja-F '64. (MIRA 17:4)

ACCESSION NR: AP4026242

S/0293/64/002/001/0150/0153

AUTHOR: Savenko, I. A.; Shavrin, P. I.; Pisarenko, N. F.; Nesterov, V. Ye.; Tel'tsov, M. V.; Yarofayeva, V. N.

TITLE: Measurement of soft radiation in the equatorial latitudes from the "Cosmos-4" satellite

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 1, 1964, 150-153

TOPIC TAGS: radiation measurement, radiation belt, cosmic ray equator, sputnik, satellite radiation measurement, Cosmos-4, soft radiation, count rate, energy release, corpuscular radiation

ABSTRACT: The second Soviet sputnik (19-20 August 1960) carried a scintillometer for recording intense, sporadic streams of corpuscular radiation in equatorial latitudes. Since this detector was designed to measure total flux energy of the particles and energy release within the crystal, the number of impulses was not directly recorded, and particle flux had to be determined from energy release in the scintillometer on the basis of various assumptions as to the nature of the particles involved and their average energy. To check conclusions

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ACCESSION NR: AP4026242

drawn from the data obtained by the 1960 satellite, Cosmos-4, launched 26 April 1962, carried an external scintillometer capable of measuring not only total energy release, but also the counting rate of particles with energies greater than 100 kev. Table 1 of Enclosure gives the counting rate N (particle/cm²/sec), the energy release E (Mev/cm²/sec), and the ratio E/N (kev), representing the average energy release per single registered particle. Values in the table are averaged over the flight segment falling within 10° of the cosmic ray equator for 13 crossings of the equator. As can be seen, the E/N values are of the order of 100 kev. However, if E/N actually represents readings caused by the simultaneous striking of the counter by two or more electrons with subthreshold (<100 kev) energies, then the count obtained may actually reflect a flux of 10⁴/cm²/sec with energies of 6 x 10⁴ ev, a flux of 10⁵/cm²/sec with energies of 3 x 10⁴ ev, or a flux of 10⁶/cm²/sec with energies of 1 x 10⁴ ev. Since large fluxes with energies of 10 kev were not observed stationarily, the energy of the recorded electrons must exceed 3 x 10⁴ ev. The occurrence of such electrons may possibly be related to seepage from radiation belts or electrical processes in the ionosphere. The results confirm the presence, apparently constant, of low-intensity (10² to 10⁵ particle/cm²/sec/steradian) electron streams with energies greater than

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ACCESSION NR: AP4026242

30 kev at an altitude of 300 km over the equatorial zone. No regular dependence of intensity and average energy on time was observed. Orig. art. has: 1 table and 1 figure.

ASSOCIATION: none

SUBMITTED: 208ap63

DATE ACQ: 16Apr64

ENCL: 01

SUB CODE: AS

NO REF SOV: 009

OTHER: 000

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ACCESSION NR: AP4026242

ENCLOSURE: 01

TABLE 1.

Number of crossing	Longitude (degrees)	Counting rate N (particle/cm ² /sec)	Energy release E (MeV/cm ² /sec)	Average energy release per particle E/N
1	14—22	$7.4 \cdot 10^2$	123	$1.6 \cdot 10^2$
2	—183—174	$6.3 \cdot 10^2$	99	$1.6 \cdot 10^2$
3	156—166	$0.7 \cdot 10^2$	12	$1.7 \cdot 10^2$
4	134—142	$3.0 \cdot 10^2$	51	$1.7 \cdot 10^2$
5	—85—70	$1.2 \cdot 10^2$	56	$3.9 \cdot 10^2$
6	125—131	$1.8 \cdot 10^2$	80	$4.5 \cdot 10^2$
7	—92—83	$3.7 \cdot 10^2$	77	$2.1 \cdot 10^2$
8	—75—65	$1.1 \cdot 10^2$	67	$6.1 \cdot 10^2$
9	163—172	$1.7 \cdot 10^2$	83	$4.8 \cdot 10^2$
10	—25—16	$1.1 \cdot 10^2$	22	$2.7 \cdot 10^2$
11	—76—67	$1.8 \cdot 10^2$	535	$3.0 \cdot 10^2$
12	—100—91	$6.4 \cdot 10^2$	170	$3.2 \cdot 10^2$
13	—53—72	$3.5 \cdot 10^2$	152	$4.4 \cdot 10^2$

VERNOV, S. N.; YEROFEYEVA, V. N.; NESTEROV, V. Ye.; SAVENKO, I. A.;
SHAVRIN, P. I.

Geographical position of maxima of particle intensity in the
external radiation belt at low altitudes. Komm.issl. 2 no. 2:
289-295 Mr-Apr '64. (MIRA 17:5)

SAVENKO, I.A.; SHAVRIN, P.I.; PISARENKO, N.F.; NESTEROV, V.Ye.;
TEL'TSOV, M.V.; YEROFYEVA, V.N.

Measurement of soft radiation at equatorial latitudes on
board the satellite "Kosmos-4." Kosm. issl. 2 no.1:150-153
Ja-F '64. (MIRA 17:4)

ACCESSION NR: AIN4034801

S/0293/44/002/002/0289/0295

AUTHOR: Vernov, S. M.; Yarofeyeva, V. N.; Nesterov, V. Ye.; Savenko, I. A.; Shavrin, P. I.

TITLE: Geographic position of the maxima of particle intensity in the outer radiation belt at low heights

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 2, 1964, 289-295

TOPIC TAGS: upper atmosphere, radiation belt, outer radiation belt, aurora, radiation intensity maximum

ABSTRACT: As a result of investigations by the second and third Soviet space-ships, the position of the maxima of intensity of particles in the outer radiation belt has been established experimentally at all longitudes. The experimentally determined intensity maxima in the outer radiation belt are situated at different longitudes approximately along the drift paths of the mirror points. However, in two ranges of longitude (from -150° to -110° and from -50° to -10°) in the northern hemisphere and in magnetically conjugate regions there is a displacement of the position of the intensity maxima in the direction of greater values L . In the first of the mentioned regions the position of the maxima of

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ACCESSION NR: AP4034801

frequency of occurrence of auroras also is displaced in the direction of larger L. As a result of investigations made on the satellite "Kosmos-4" it has been found that in a broad range of longitudes there is a displacement of the intensity maximum in the outer radiation belt on magnetically quiet days in the direction of greater latitudes than is the case on magnetically disturbed days. Fig. 1 of the Enclosure shows the geographic position of the maxima of intensity of particles in the outer radiation belt at low heights. The authors thank M. V. Tel'tsov and N. I. Pisarenko for participation in the experiment, L. V. Drozdova and O. F. Gorskaya for assistance in finalizing the data and V. Gess who furnished the maps of drift paths at various heights". Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 19Nov63

DATE ACQ: 20May64

ENCL: 02

SUB CODE: AA

NO REF SOV: 006

OTHER: 005

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ACCESSION NR: AF4034801

ENCLOSURE: 01

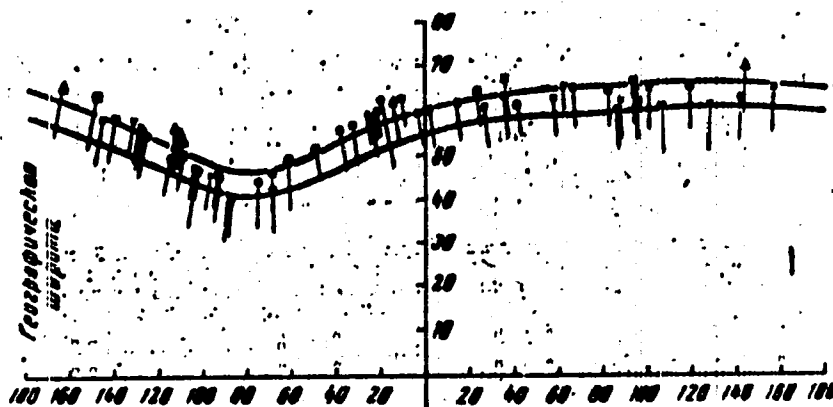


Fig. 1. Geographic position of the maxima of intensity of particles in the outer radiation belt at low heights. The filled circles and squares denote experimentally determined points of the maxima found from flights of the second and third

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ACCESSION NR: AP4034801

ENCLOSURE: 02

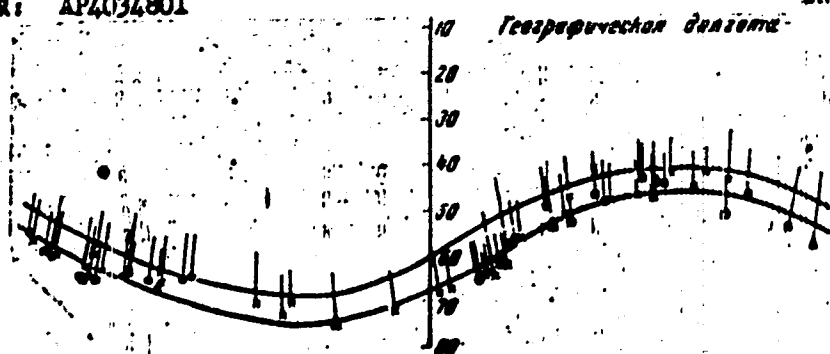


Fig. 1 (cont.) spaceships respectively; the crosses denote magnetically conjugate points for maxima measured on spaceships; the open squares denote experimentally determined points of the maxima obtained during the flight of the satellite "Kosmos-4"; the triangles denote magnetically conjugate points for maxima measured on the satellite "Kosmos-4"; the lines denote the drift paths of mirror points (at lesser latitudes for $L = 3$ and at greater latitudes for $L = 4$).

vertical: geographic latitude; horizontal: geographic longitude

Card 4/4

YEROFEYEVA, Ye. A.

Yerofeyeva, Ye. A. -- "Experimental Investigation of the Possibility of Regulating the Properties of Gas Concrete." Min Higher Education USSR. Moscow Order of Labor Red Banner Construction Engineering Institute V. V. Kuybyshev. Chair of "Construction Materials." Moscow, 1956. (Dissertation For the Degree of Candidate in Technical Sciences).

So: Knizhnaya Letopis', No. 11, 1956, pp 103-114

AUTHORS: Ginzburg, A. I., Gorzhevskaya, S. A. SOV/7-58-5-10/15
Yerofeyeva, Ye. A., Sidorenko, G. A.

TITLE: On the Chemical Composition of the Cubic Titanium-Tantalum
 Niobates (O khimicheskom sostave kubicheskikh titano-tantalo-
 niobatov)

PERIODICAL: Geokhimiya, 1958, Nr 5, pp 486 - 500 (USSR)

ABSTRACT: The specific properties of the so-called mineral group are
 described in detail in the beginning; then the division into
 the perovskite type (ABX_3) and pyrochlorine type ($A_2B_2X_7$)
 is discussed. 22 chemical and x-ray analyses (Table 3) are
 the basis of this paper. A number of analyses are plotted in
 several diagrams of ternary systems: Nb - Ti - Ta (Fig 1);
 A - B - X (Fig 5); Nb - Ti, Zr - Ta (Fig 6); Ca - TR - U - Th
 (Fig 7). The dependence of the lattice constant on the TiO_2
 content in the perovskite group (Fig 2) and in the pyrochlorine
 group (Fig 3) is also shown. The result of the paper is a
 classification of the mineral groups investigated (Table 2).
 The empiric formulae of minerals greatly differ from the

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On the Chemical Composition of the Cubic Titanium-
Tantalum Niobates

SOV/7-58-5-10/15

theoretical formulae generally adopted for them. A deficiency of cations in the group "A" was found. In connection herewith the formula $A_{n-x}B_pX_q$ is proposed where x denotes the value determining the deficiency in the atomic numbers of the group "A". For the pyrochloric type the formula then reads $A_{2-x}B_2X_7$, and for the perovskite type $A_{1-x}BX_3$, or $A_{2-x}B_2X_6$. The atomic proportion of the cations of the group "A" in the cubic titanium-tantalum niobates ranges from 2,0 to 0,5, a definite dependence between the extent of the cation deficiency in the group "A" and the content of titanium, zirconium, uranium, thorium and water in minerals having been observed. The usual minerals with an increased cation deficiency in the group "A" are metamictic minerals. There are 9 figures, 3 tables, and 23 references, 15 of which are Soviet.

ASSOCIATION: Vsesoyuznyy institut mineral'nogo syr'ya, Moskva (All-Union
Institute for Mineral Raw Materials, Moscow)

SUBMITTED: March 17, 1958
Card 2/3

On the Chemical Composition of the Cubic Titanium-
Tantalum Niobates

B07/7-58-5-10/15

Card 3/3

KUDRYASHEV, I.T., kand.tekhn.nauk. Prinimali uchastiye: POPOV, N.A., prof., doktor tekhn.nauk; YEROFEYeva, Ye.A., kand.tekhn.nauk; GORYAINOV, K.E., doktor tekhn.nauk; VOLCHAK, I.Z., kand.tekhn.nauk; KUPRIYANOV, V.P., kand.tekhn.nauk; YAKUB, I.A., kand.tekhn.nauk; KEVESH, P.D., kand.tekhn.nauk; ERSHLER, E.Ya., inzh.. KHAVIN, B.M., red.isd-va; STEPANOVA, N.S., tekhn.red.; SOLOVTSOVA, L.M., tekhn.red.

[Technical instructions for the manufacture of prefabricated elements from cellular autoclave concrete] Tekhnicheskie uslovia na izgotovlenie sbornykh izdelii iz avtekhnicheskikh iacheistyykh betonev. Moskva, Gos.isd-vo lit-ry po stroit., arkhit., i stroit.materialam, 1959. 79 p. (MIRA 12:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Nauchno-issledovatel'skiy institut betona i zhelezobetona Akademii stroitel'stva i arkhitektury SSSR (for Kudryashev). 3. Moskovskiy inzhenerno-stroitel'nyy institut imeni V.V.Kuybysheva, (for Popov, Yerokeyev). 4. Nauchno-issledovatel'skiy institut po stroitel'stvu Ministreya RSFSR (for Goryainov, Volchak, Kupriyanov, Yakub). 5. Nauchno-issledovatel'skiy institut zhelezobetona Glavmoszhelezobetona (for Kevesh, Ershler). 6. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Popov).
(Precast concrete)

SOV/132-59-2-4/16

3(8)

AUTHOR:

Yerofeyeva, Ye.A.

TITLE:

A Method of Calculating the Specific Weight of Minerals According to the Speed of Fall of Mineral Particles in Viscous Liquids (Metodika opredeleniya udel'nogo vesa mineralov po skorosti padeniya mineral'nykh chastits v vyazkoy srede)

PERIODICAL:

Razvedka i okhrana neдр, 1959²⁵ Nr 2, pp 15-25 (USSR)

ABSTRACT:

The author proposes a new method of calculating specific weights of minerals under field conditions, especially those minerals belonging to the tantalotitano-niobate group. The method is based on the principle of free fall of mineral particles of definite dimensions in a viscous liquid. According to Stokes' law, the free fall speed of these particles can be expressed by the formula

$$V = \frac{2r^2 \cdot (d_1 - d_2)}{9\mu}$$

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SOV/132-59-2-4/16

Method of Calculating the Specific Weight of Minerals According to the Speed of Fall of Mineral Particles in Viscous Liquids

where V is the speed of the fall of the particle; r is the radius of the particle; d_1 - specific weight of the mineral; d_2 - specific weight of the viscous liquid and μ - the viscosity of the liquid. If the speed V is expressed by the distance S covered by the particle in a time t , the formula is finally

$$t = \frac{9\mu S}{2r^2 \cdot (d_1 - d_2)}$$

Sunflower oil was chosen as the viscous liquid, with its temperature maintained at 20 - 22°C. Ninety two samples of minerals, mainly of the tantalum-titane niobate group, were used in the experiment. Their specific weights were determined by the pycnometrical method applied by N.I. Rudenko and M.M. Vasilevskiy. Two classes of samples of two different dimensions were prepared from each sample; one of 0.50 - 0.45 mm, and the other of 0.35 - 0.25 mm. A 30 cm long glass tube, filled with sunflower oil, was used for the experi-

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SOV/132-59-2-4/16

A Method of Calculating the Specific Weight of Minerals According to the Speed of Fall of Mineral Particles in Viscous Liquids

ment. On a part of its side, 12 divisions were marked, giving the distance S of the formula equal to 12.3 cm. Mineral particles were dropped successively into the tube and the time required to reduce them to 12.3 cm was noted. After that, an average time was calculated for every 10 to 15 particle. The data obtained was noted on a graph and two curves were thus traced. On the abscissa axis, specific weights of minerals used in the experiment were noted; on the ordinate axis, the average calculated time of fall of particles was noted (Figure 3). Points, marking the average time on the graph, form two curves according to the weights of particles. Using these curves, the specific weight of each particle can be calculated with an accuracy of up to 0.5 of the unit of specific weight. There are 3 tables, 2 graphs, 1 diagram and 6 Soviet references.

ASSOCIATION: (VIMS)

Card 3/3

GINZBURG, A.I.; GORZHEVSKAYA, S.A.; YEROFYEVA, Ye.A.; SIDORENKO, G.A.

Chemical composition of tetragonal titanium-tantalum-
niobates. Geokhimiya no.1:11-30 '60. (MIRA 13:6)
(Fergusonite)

S/081/62/000/010/033/085
B177/B144

AUTHOR: Yerofeyeva, Ye. A.

TITLE: Physical properties of titanium-tantalum-niobates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 110, abstract
10668 (Sb. "Geol. mestorozhd. redk. elementov", no. 10, M.,
Gosgeoltekhizdat, 1960, 107 - 115)

TEXT: All the cubic titanium-tantalum-niobates possess very many physical properties in common and are indistinguishable from one another in external appearance. The only way to diagnose them accurately is by a combined investigation covering a number of properties. The principal method of determining them is by X-ray structural analysis, which enables the mineral to be classed in a particular group according to the dimensions of its unit cell and by structure. The variety of the mineral can be determined by thermal analysis, notably for a number of metamict minerals. Specific gravity uniquely distinguishes microlites from pyrochlore, loparite from perovskite, knopite, dysanallyte and others. Titanium and niobium-titanium minerals can be distinguished from all other cubic titanium-tantalum-niobates by their higher indices of refraction.

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S/081/62/000/010/033/085
B177/B144

Physical properties of...

Those with the lowest indices of refraction are the deficient varieties:
metamict pyrochlore, hydrated microlite, obruchevite, ellsworthite,
hatchettolite, betafite, titano-betafite and blomstrandine. [Abstracter's
note: Complete translation]



Card 2/2

S/081/62/000/010/029/085
B177/B144

AUTHOR: Yerofeyeva, Ye. A.

TITLE: The classification of cubic titanium-tantalum-niobates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 109, abstract
10G63 (Sb. "Geol. mestorozhd. redk. elementov". no. 10, M.,
Gosgeoltekhizdat, 1960, 115 - 129)

TEXT: In terms of crystal chemistry, cubic titanium-tantalum-niobates fall into two structural types: those of pyrochlore and those of perovskite. According to which group-B cations predominate, chiefly through an increase of Ti, each of these types is divided into sub-types. The pyrochlore type has 4 sub-types, and the perovskite type has 2. Special types of minerals are distinguished by the predominance of group-A cations. Mineral species are further divided distinguished in varieties according to the deficiency of atomic quantities of group-A cations. The chemical composition of cubic titanium-tantalum-niobates agrees well with data from X-ray analysis, cellular dimensions diminishing regularly from the niobium sub-type to the titanium sub-type. [Abstracter's note: Complete translation.]

Card 1/1

S/081/62/000/010/035/085
B177/B144

AUTHOR: Yercfeyeva, Ye. A.

TITLE: Classification of tetragonal tantalum-niobates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 110, abstract
10G70 (Sb. "Geol. mestorozhd. redk. elementov". no. 10, M.,
Gosgeoltekhizdat, 1960, 155 - 158)

TEXT: Tetragonal tantalum-niobates are represented by one structural type with the formula ABO_4 , where group A contains chiefly TR (usually of an yttrium composition), and to a lesser extent Ca, Th and U. Group B contains Nb and Ta, and to a lesser extent Ti (not more than 20% of atomic quantities). Tetragonal tantalum-niobates are divided into sub-types according to the cation predominating in group B. Distinction between mineral varieties by physical properties is improbable. [Abstracter's note: Complete translation.]

Card 1/1

YEROFEYEVA, Ye.V., Meditsinskaya sestra

Care of children with diphtheria. Med. sestra 22 no.5:42-47
My'63. (MIRA 16:8)

1. In Tambovskoy infektsionnoy bol'nitsy.
(DIPHTHERIA)

KOLESNICHENKO, Vasil'y Vasil'yevich; YEROFTEYEV, Petr Vasil'yevich;
LEVITSKIY, I.S., doktor tekhn. nauk, red.; MEL'NIKOVA, G.P.,
red.; PERSON, M.N., tekhn. red.

[Laboratory and practical work on the fundamentals at repairing
and the study of materials] Laboratorno-prakticheskie zaniatia
po osnovam materialovedeniia i remontnogo dela. Pod red. I.S.
Levitskogo. Moskva, Proftekhizdat, 1962. 158 p. (MIRA 16:2)

(Engineering laboratories)
(Machinery--Maintenance and repair)

YEROKHIN, A.

Making reinforcements on the ST-413 stand. Stroitel' no. 11:15-18
(MIRA 13:11)
'60.

1. Starshiy instruktor peredovykh metodov truda Nauchno-issledovatel'-
skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi
stroitel'stvu.
(Prestressed concrete)

YEROKHIN, A.

Sparkling grains. Sov.profsoiuzy 5 no.11:63-64 N '57. (MIRA 10:11)
(Rubies)

YEROKHIN, A. (Lt. Col.)

AID - F-42

Subject : USSR/Aeronautics

Card : 1/1

Authors : Yerokhin, A., Lt. Col., and Kotlyarskiy, M., First Lt.

Title : Execution of the Calculation of Instrument Landing by the "Large Box" Method (Four turn method)

Periodical : Vest. vozd. flota 3, 28 - 36, March 1954

Abstract : The author defines the "Large Box" as a figure flown in order to reach exactly the calculated point of the beginning of the fourth turn before an instrument landing. An example of an incorrectly executed "Large Box" is given, and then the method of the correct execution is explained in detail. Six diagrams, two tables.

Institution : None

Submitted : No date

YEROKHIN, A-A.

PHASE I BOOK EXPLOITATION SOV/5581

17

Moscow. Dom nauchno-tekhnicheskoy propagandy.

Vysokoproduktivnyy rezhushchiy instrument [sbornik] (Highly Productive Cutting Tools; Collection of Articles) Moscow, Mashgis, 1961. 354 p. Errata slip inserted. 10,000 copies printed.

Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR. Moskovskiy dom nauchno-tekhnicheskoy propagandy imeni P. E. Dzerzhinskogo.

Ed. (Title page): N. S. Degtyarenko, Candidate of Technical Sciences; Ed. of Publishing House: I. I. Lesnichenko; Tech. Ed.: Z. I. Chernova; Managing Ed. for Literature on Cold Treatment of Metals and Machine-Tool Making: V. V. Rzhavinskiy, Engineer.

PURPOSE: This collection of articles is intended for technical personnel of machine, instrument, and tool plants.

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Highly Productive Cutting Tools (Cont.)

SOV/5581

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COVERAGE: The collection contains information on the following:
new brands of high-speed steels and hard alloys; designs of
built-up tools and tools for the machining of holes; tools
for machining heat-resisting and light-metal alloys and plastics;
tools for unit-head machines and automatic production lines;
and methods for the sharpening and maintenance of carbide-
tipped tools. No personalities are mentioned. There are 56
references, mostly Soviet. References accompany some of the
articles.

TABLE OF CONTENTS:

Foreword

I. NEW BRANDS OF HIGH-SPEED STEELS AND HARD ALLOYS

Geller, Yu. A. [Doctor of Technical Sciences, Professor]. Highly
Productive High-Speed Steels

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Highly Productive Cutting Tools (Cont.)

SOV/5581

III. TOOLS FOR MACHINING HEAT-RESISTING
AND LIGHT-METAL ALLOYS AND PLASTICS

Vershinskaya, A. D. [Engineer]. Drilling of Titanium and Heat-Resisting Alloys 135

Andreyev, G. S. [Candidate of Technical Sciences]. Reaming of Heat-Resisting Alloys 154

Yerokhin, A. A. [Candidate of Technical Sciences]. Shank-Type Tools for Machining Holes in Light-Metal Alloys 171

Yegorov, S. V. Cutting Tools for Machining Plastics 180

IV. TOOLS FOR UNIT-HEAD MACHINES AND
FOR AUTOMATIC PRODUCTION LINES

Kushner, Z. Yu. Tools for Machining Holes on Unit-Head Machines and on Automatic Production Lines 197

Card 4/6

1.2300

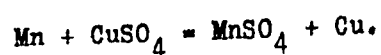
24775
S/125/61/000/008/001/014
D040/D113

AUTHORS: Yerokhin, A.A., Bykov, A.N., and Kuznetsov, O.M.

TITLE: Oxidation of manganese in basic electrode coatings

PERIODICAL: Avtomaticheskaya svarka, no. 8, 1961, 13-19

TEXT: The oxidation of ferromanganese in mixtures with marble, fluorite, ferrosilicon and graphite was studied in experiments with specimens heated to 1000-1050° in a laboratory tube furnace. The quantity of Mn left non-oxidized was determined by methods proposed by V.S. Nagibin and A.V. Arkhipova, staff members of the chemical analysis laboratory of the Institut metallurgii im. A.A. Baykova (Institute of Metallurgy im. A.A. Baykov). The method consisted in treating specimens with a CuSO_4 solution and passing the metallic Mn into the solution according to the following reaction:



After heating the specimen, the losses in tempering and the quantity of metallic Mn were determined. According to these data, the marble dissociation
Card 1/5

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S/125/61/000/008/001/014

D040/D113

Oxidation of manganese...

degree (γ) and the Mn oxidation degree (ξ) were calculated. Argon shielding decreased Mn oxidation (ξ); ferrosilicon had a noticeable effect in the case of fusion in a mixture with fluorite; graphite and ferrosilicon additions had only a slight effect in argon. Marble dissociation practically ended after suspension for 2-3 min at 1000°C, or 3-6 min at 850°C (Fig. 1). The Mn oxidation reached its maximum after 2-3 min and remained unchanged after further heating (Fig. 2). The value ξ indicates the percentage CaCO_3 ratio in the mixture. In all experiments γ and ξ increased proportionally approximately according to the linear function but only to a certain ξ value, after which γ ceased to increase in heating the specimen in argon as well as in air. This effect is explained by the action of CO_2 forming during marble decomposition. Increased carbon content compared to the initial content was observed in metallic Mn nuggets that formed in mixtures with fluorite. The behavior of electrothermic ferromanganese (82% Mn, 1% C) was different from that of blast furnace-melted ferromanganese (71% Mn, 6.5% C), the summary oxidation rate of the former being lower than that of the latter. The peculiar behavior of coarse blast furnace ferromanganese (cessation in the increase in γ when $\xi > 1$ and a secondary increase in

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S/125/61/000/008/001/014

D040/D113

Oxidation of manganese...

γ when $\xi \approx 6$) requires additional experimental investigations. The following conclusions are drawn: (1) On reheating a carbonaceous coating containing ferromanganese, CO_2 oxidizes 20-60% of the manganese during the decomposition of the carbonate; (2) The manganese oxidation degree (γ) in similar conditions depends on the ratio between the carbonate and manganese contents (ξ) in the mixture. The γ and ξ values increase proportionally, but to a definite limit. The lower the ξ value, at which the maximum Mn oxidation degree for the given ferromanganese powder is reached, the higher is the rate of oxidation; (3) In oxidizing the electrothermic ferromanganese, the carbon content in the nonoxidized part of it increases in comparison with the initial carbon content. This may be explained by the thermodynamic stability of manganese carbide in the given conditions. There are 4 figures, 2 tables and 3 Soviet references.

ASSOCIATION: Institut metallurgii im. A.A. Baykova (Institute of Metallurgy im. A.A. Baykov)

SUBMITTED: December 31, 1960

Card 3/5

YEROKHIN, A.A.

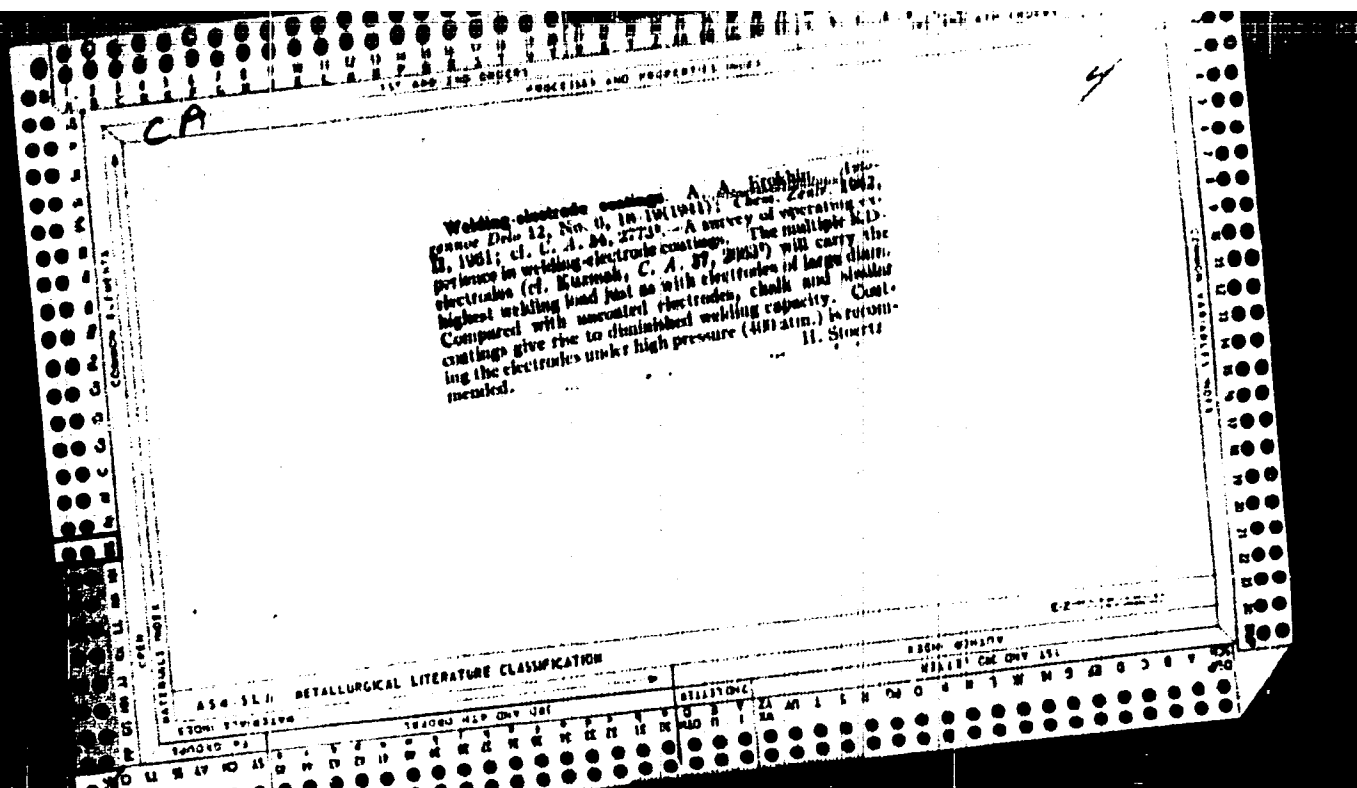
Enterprises of the Economic Council at the Exhibition of Achievements
of the National Economy of the U.S.S.R. Za Indus.Riaz. no.2:69 D
'61. (MIRA 16:10)

1. Starshiy inzh. Byuro tekhnicheskoy informatsii Ryazanskogo
soveta narodnogo khozyaystva.

9

ca

Plumes for welding carbon steel. A. A. Podgorny. *Atmosfera*, No. 12, 12-18, 1966. A comparative investigation of the plumes produced in accordance with various compositions and in conformity with the MnO-FeO diagram by Herty (C.A. 20, 3276) led to the prep. of "OMM-1" contg. Ti concentrate (TiO₂ 48, Fe 20-4) and SiO₂ 10%; 250, manganese ore 300, ferromanganese 200, and starch 150 parts by wt., and "OMM-2" contg. the same ingredients as "OMM-1" in addn. to lignin 300 parts by wt. The temp. of the beginning and the final solidification and the viscosity of the slag play an important role in the welding process. A. A. Podgorny



PRINCIPAL AND PROPERTY INDEX																									
<div style="text-align: right;">9</div> <div style="text-align: center;"> <p>Classification of (welding) electrodes from the point of view of their technological properties. <i>A. A. Il'inski</i> <i>Известия ДПИ 1946, No. 1, 28-32.</i> M. Hensch</p> </div>																									
<div style="display: flex; justify-content: space-between;"> <div> <p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>FROM STRUCTURE</p> </div> <div> <p>FROM COMPOSITION</p> <p>FROM PHYSICAL PROPERTIES</p> </div> </div>																									

YEROKHIN, A. A., Engineer--

"Development and Investigation of Electrodes With Protective Coatings
for Welding Low-Carbon Steel." Sub 24 Feb 47, Central Sci Res Inst of
Technology and Machine Building (TsNIITMash)

Dissertations presented for degrees in science and engineering in
Moscow in 1947.

SO: Sum.No. 457, 18 Apr 55

22-002. A Method of Estimating the Amount of Coating on an Electrode. A. Erokhin. *Avtoprozess Delo (Welding)*, Aug. 1947, p. 18-13. (In Russian.)

A coefficient of the ratio of the weight of coating to the weight of the metal taking part in the process is proposed as a criterion for estimating the quantity of coating. This ratio is shown to be nearly constant for different sizes of electrodes having coatings of the same composition.

YEROKHIN, A. A.

"Methods of Studying the Technological Properties of Electrodes" Avtogen. Delo No. 8,
1948; Cand Tech. Sci. (NIAT). -c1948-.

19

Methods for the Determination of the Main Parameters of the Process of Electrode Melting in Electric Arc Welding. A. A. Erokhin. (Avtogennoe Delo, 1948, No. 10, pp. 6-11). [In Russian]. Problems connected with the standardization of electrode testing are considered, and suggested standard welding conditions are listed for the determination of their principal parameters characterizing the following: the weights of fused and deposited metals per unit of electrical charge; the weight of metals fused; the weight of coating per unit weight of electrode wire; the weight of slag formed over the weld per unit weight of coating melted. Several methods are given for the determination of each parameter, and, as an example, a set of experimental data and the necessary derived quantities are tabulated. These suggestions have received official approval.—S. K.

34

1ST AND 2ND SECTIONS		3RD AND 4TH SECTIONS		5TH AND 6TH SECTIONS		7TH AND 8TH SECTIONS	
B						7	
<p>Arc Voltage as Related to Type of Electrode. (In Russian.) A. A. Ershin. <i>Arzhennoye Delo</i> (Welding), Feb. 1949, p. 15-17.</p> <p>Proposes use of arc voltage at normal arc length for a given electrode and other standard conditions as differentiation characteristics for welding electrodes. Such voltage is called the nominal voltage and depends on electrode composition and coating. A formula determining the specific power consumption per unit weight of melted metal is derived.</p>							
<p>ABB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>SECTION SYMBOLS</p> <p>CODES WITH ONLY ONE</p> <p>RELATIONS</p> <p>QUALITY</p> <p>DATE</p> <p>REVIEW</p> <p>REVISION</p> <p>REMARKS</p>							

YEROSHIN, A. A.

"The Use of the Technological Characteristics of Electrodes in Production Cost Accounting" *ibid.*, No. 9, 1949; *Cand Tech. Sci.*, (Sci Res Inst. of Technology and Organisation of the Aviation Industry). -1949-.

YEROKHIN, A. A.

USSR/Engineering - Welding -
Electrodes

Nov 49

"The Effect of the Type (Mark) of an Electrode on
the Geometry of a Welded Seam," A. A. Yerokhin,
Cand Tech Sci, Sci Res Inst of Tech and Organization
of Avn Ind, 7 1/2 pp

"Avtogen Delo" No 11

Relationship of height of bead and width and depth
of fusion zone to type of electrode was established
for nine different types of electrodes, all 5 mm
in diameter. Influence of current intensity, welding
rate, and arc length were considered in this con-
nection.

197760

YEROKHIN, A.A.

USSR/Engineering - Welding, Equipment Jul 51

"New Brand of Electrodes With Improved Technological Properties for Welding Stainless Steels,"
A. A. Yerokhin, Cand Tech Sci

"Avtogen Delo" No 7, pp 4-9

Discusses basic electrode requirements for welding thin steel (1-3 mm) and effect of coating materials on electrode's technological characteristics. Reviews existing electrodes for welding stainless steel and describes new electrode N-1 which is superior to other brands for welding thin metal. Has lower fusing capacity and higher stability of arc.

210T39

271-M. New Type of Electrode With
Improved Technological Properties for
Welding Stainless Steel. (In Russian.)
A. A. Ershov. *Aviatsionnoe Delo*, v. 22,
July 1981, p. 24.
A new stainless steel welding elec-
trode was investigated under vari-
ous conditions. Results are tabulat-
ed, charted, and illustrated, 14 ref.
(K1, BB)

YEROKHIN, A. A.

USSR/Metallurgy - Welding, Electrodes Oct 52

"Comparative Study of Certain Types of High-
Production Electrodes," A. A. Yerokhin, Cand
Tech Sci

"Argon Deio" No 10, pp 26-30

Develops formulas detg rate of welding in 2
cases, when either process of metal weld-up
or penetration process has decisive effect
on welding productivity. Discusses charac-
teristics and application of several elec-
trodes. Concludes that cluster-type

231157

electrodes give no significant increase
in productivity of welding process as com-
pared with ordinary electrodes. Makes sim-
ilar conclusion concerning method of welding
with electrode resting on surface of work-
piece, defined sometimes as ultrashort arc
welding.

231157

YEROKHIN, A.A., kandidat tekhnicheskikh nauk.

Characteristics of manual arc welding with an electrode cluster and conditions for its practical application. Vest.mash. 33 no.7:60-63 J1 '53.
(MIRA 6:8)

(Electric welding)

YEROKHIN, A. A.

YEROKHIN, A.A.; PETROV, A.V.; BOGACHEV, M.N.

Examining rapid phenomena in the welding arc by taking motion pictures. Avtom. svar. 7 no.1:59-63 Ja-F '54. (MIRA 7:7)
(Electric welding) (Moving-pictures in industry)

USCR/Miscellaneous - Industrial processes

Card 1/1 Pub. 103 - 9/24

Authors : Erokhin, A. A., and Sokovnina, A. M.

Title : Bar honing on an organic cementing medium

Periodical : Stan. i instr. 11, 21-23, Nov 1954

Abstract : The introduction into industry of methods for honing of alloyed hardened steel details, by means of bars having an organic cementing medium, is announced. The introduction of the new honing methods made it possible to improve the quality of

characteristics of the new bar honing method are given in the
drawings.

Institution : ...

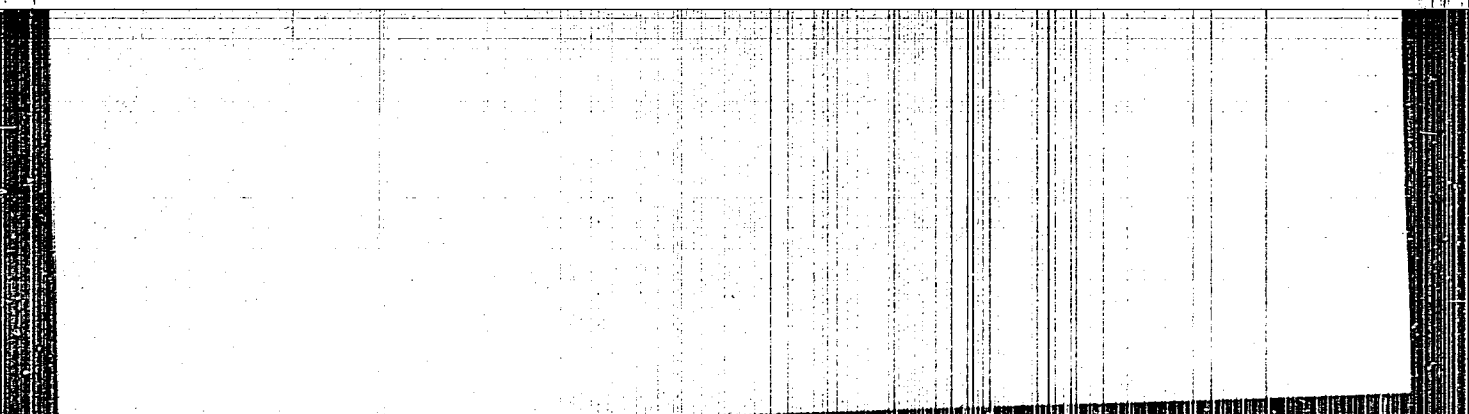
Submitted : ...

YEROKHIN, A.A., kandidat tekhnicheskikh nauk.

Regular basic conditions for the transfer of alloying elements from the electrode to the weld in the arc welding and hard facing of steels. Svar.prikl.no.4:4-9 Ap '55. (MIRA 9:7)
(Electric welding) (Steel--Welding)

"APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001962820020-1



APPROVED FOR RELEASE: 03/20/2001

CIA-RDP86-00513R001962820020-1"

USSR/Engineering - Metallography

Card 1/1 Pub. 41 - 9/15

Author : Yerokhin, A. A., Moscow

Title : On the temperature of drops of molten electrode metal during arc welding

Periodical : Izv. AN SSSR, Otd. Tekh, Nauk 9, 125-136, Sep 55

Abstract : Presents data obtained from the accurate calorimetric measurement of drops of metal on the face of the electrode at the moment of their separation from the electrode. Describes methodology and corrective factors introduced to compensate for cooling during transfer to calorimeter, etc. Tables, formulae, drawings. Nineteen references, 17 USSR.

Institution:

Submitted : April 16, 1955

YEROKHIN, A.A.

**Evaluation of the fluidity of the weld pool. Zav.lab.21 no.12:1466-
1468 '55. (MLRA 9:4)**

(Electric welding--Testing)

AID P - 4868

Subject : USSR/Engineering

Card 1/2 Pub. 107-a - 2/14

Author : Yerokhin, A. A.

Title : Regularity in transition of alloy elements from the electrode into the seam during the arc welding and hard facing of steels.

Periodical : Svar. proizv., 4, 4-9, Ap 1956

Abstract : The author presents his analysis of the data available on the subject. He describes various methods of alloying metals, the means for determination of the metal content in a seam as a correlation between the base metal and the metal of the electrode; and the means for evaluation of the assimilation and oxidation of alloy elements. Also described are the transition of elements in argon welding by the melting electrode, the effects of the length of the arc on transition of alloy elements, mutual influence of elements in "complex" alloying; dependence the transition of alloy elements on the concentration and thickness

AID P - 5266

Subject : USSR/Engineering
Card 1/1 Pub. 107-a - 2/18
Author : Yerokhin, A. A., Kand. of Tech. Sci.
Title : Testing electrodes for welding of high-strength steels
Periodical : Svar. proizv., 9, 4-9, S 1956
Abstract : In presenting a summation of reports delivered at the Welders' Convention of the Machine-Building Industry (INTO MASHPROM), the author describes the research carried out at the Scientific Research Institute of Technology and Organization of Production in order to determine the characteristics of alloyed and overlayed metal. He provides results of these tests for selection of electrodes for welding high-strength steels. Ten tables, 5 graphs, 3 drawings, 2 GOST standards. 6 Russian references (1947-54).
Institution : As above
Submitted : No date

YEROKhin, A.A.

AID P - 5593

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 5/12

Authors : Yerokhin, A. A., Kand. of Tech. Sci., and Sh. G.
Rubin, Eng.

Title : Equipment for manufacturing standard electrodes by
high-pressure presses.

Periodical : Svar. proizv., 11, 20-23, N 1956

Abstract : The authors present the EU-2 electrode-coating
installation, its technical data and productivity
table. They also provide a description of the EP-275
electrode-coating press, and technical data of the
PB-210 briquetting press, the SB-1 mixer and the APO-2
leveling and cutting wire automatic machine. Four
photos, 2 drawings, 2 tables; 7 Russian references
(1950-55).

Institution : As above

Submitted : No date

YEROKHIN, A.A.

AUTHOR: Yerokhin, A.A., Candidate of Technical Sciences 135-12-2/17

TITLE: On the Oxidizing Effect of Some Welding Rod Coating Components in Arc Welding (Ob okislitel'nom deystvii nekotorykh komponentov elektrodnykh pokrytiy pri dugovoy svarke)

PERIODICAL: Svarochnoye Proizvodstvo, 1957, # 12, p 5-9 (USSR)

ABSTRACT: This is the author's report delivered at a Moskva oblast' welders conference on the scientific and industrial work results in 1956. The report contains a brief review of the available Soviet data (12 references and one citation in the text - experiments of L.V. Sukhov) on the subject matter, which are contradictory and insufficient, and a detailed information on the special experimental investigation performed by the author's institute. This investigation consisted of 5 series of experiments with different metallurgical conditions and several grades of welding wire, with hematite, marble, fluorite, and synthetic slag (45 % Al_2O_3 , 43 % CaO , 12 % BaO) used in various proportions in the coating compound. Water glass was used as the binding material in all cases. Welding wire "CB-18XTC" proved to give the clearest picture of the oxidation processes and was selected for further detailed experimental studies. The influence of the slag basicity on the oxidation of admixtures

Card 1/3

135-12-2/17

On the Oxidizing Effect of Some Welding Rod Coating Components in Arc Welding

was studied in the 5th experimental series with "VOHM-13/45" electrodes (wire "CB-08A) and various combinations of marble, quartz and fluorite. Welding in air was also studied for comparison. The synthetic slag proved technologically unsatisfactory. The following essential conclusions were made:

1. Coating consisting of marble alone creates more intensive oxidizing conditions in the process of metal melting in the arc than air or CO_2 , which can be accounted for by the access of oxygen through direct contact of the incompletely dissociated CaCO_3 particles with the metal. The oxidizing influence of the coating noticeably increases with increasing weight proportion of marble in the electrode coating.

2. The oxidizing influence of carbonato-fluorite compounds decreases with the increasing concentration of fluorite therein. The same effect is obtained by replacement of marble in the coating by alumina or other components that add no oxygen and do not change the relation $\frac{\text{CaO}}{\text{SiO}_2}$ in slags.

3. The intensity of oxidation of manganese and silicon depends upon the basicity of slag. An increase of the relation $\frac{\text{CaO}}{\text{SiO}_2}$ causes increased transfer of Mn and decreased transfer of Si.

Card 2/3

135-12-2/17

On the Oxidizing Effect of Some Welding Rod Coating Components in Arc Welding

There are 4 tables, 12 diagrams and 11 Russian references.

ASSOCIATION: Institute of Metallurgy imeni A.A. Baykov, USSR Academy of
Sciences (Institut metallurgii imeni A.A. Baykova, AN SSSR)

AVAILABLE: Library of Congress

Card 3/3

2.37 yepok n.n.
AUTHOR: Gulyayev, B.B.
TITLE: Conference on Crystallization of Metals (Sovetskaniye po Kristallizatsii Metallov)

PERIODICAL: Izvestiya Akademi Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1976, Nr. 4, pp. 153 - 155 (USSR)

ABSTRACT: This conference was held at the Institute mashinovedeniya (Institute of Mechanical Engineering of the A.S.S.U.) on June 28-31, 1976. About 400 people participated. The participants included specialists in the fields of metallurgy, crystallography, physics, welding, heat treatment, mechanical physics and other related subjects. In addition to Soviet participants, foreign visitors included Professor D. G. Chel (East Germany) and E. I. Gerasimov (Czechoslovakia). This conference on crystallization of metals was the fourth conference relating to the general problem of the theory of foundry processes.

SYNOPSIS: Crystallization of non-ferrous metals. M. K. Bolshakov and I. L. Bolshakov - in their paper "Investigation of the Crystallization and the Properties of Non-ferrous Metals Under Conditions of Applying Pressure", presented results of experiments on producing castings which crystallize under pressure from all sides and piston pressure within a wide range of specific loads. The results of the investigation provide material for improving existing methods of applying pressure to influence the crystallization of alloys. The influence of the conditions of crystallization on the casting and mechanical properties of aluminum alloys, at normal and at elevated temperatures, is discussed in the papers of I. F. Bolshakov and A. N. Bolshakov. The results of investigations of the conditions of crystallization of aluminum alloys during continuous casting were presented in the paper of I. A. Bolshakov. I. L. Bolshakov and N. V. Gerasimov dealt with the features of crystallization of various non-ferrous alloys and the physico-chemical phenomena accompanying this process.

Carot/10
 The crystallization of metals in the welding bath. The following papers were read: I. A. Bolshakov, Investigation of the Features of the Microscopic Chemical Heterogeneity in Alloys; G. I. Pelyayev - "Crystallization and Chemical Heterogeneity in Weld Joints"; M. K. Bolshakov and I. L. Bolshakov - "Influence of Non-uniformities of Crystallization in the Weld Bath on the Formation of Hot Cracks".

Carot/20
 Crystallization of Metals in an Ultrasonic Field. The following papers were read: I. L. Bolshakov and I. A. Bolshakov - "Crystallization of Metals and Alloys in an Ultrasonic Field"; I. A. Bolshakov - "Influence of Electric Oscillations on the Features of Crystallization and the Technological Properties of Alloys"; I. L. Bolshakov and I. A. Bolshakov - "Effect of Ultrasonics on Crystallizing Metal in the Weld Bath".

135-58-1-21/23

AUTHOR: Yerokhin, A.A., Candidate of Technical Sciences

TITLE: Fundamental Problems of Electrode Standardization For Arc Welding (Osnovnyye voprosy standartizatsii elektrodov dlya dugovoy svarki)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 1, pp 45 - 46 (USSR)

ABSTRACT: The author states that GOST 2523-51 "Steel Electrodes for Arc Welding and Fusion" is obsolete and needs modernizing. He says it must comprise electrodes of fireproof alloys (EI-334 and EI/I 35) and electrodes for the welding of aluminum, copper and other non-ferrous metals and alloys. The new standards must include the following fundamental types of electrodes: a) electrodes for the welding of low carbon and low and medium alloyed steels, including electrodes for the welding of perlite fireproof steel (table 2, GOST 2523-51) b) electrodes for the welding of high alloyed steels and alloys; c) electrodes for the welding of nonferrous metals; d) electrodes for the welding of surface layers possessing special properties; e) electrodes for repair welding of cast iron. A special section "Forms of Index Cards For Electrodes and Methods of Their Tests" must be included in the GOST. These index cards must comprise characteristics of smelting nominal arc voltage, maximum values of admissible current, fitness for welding by alternating

Card 1/ 2

135-56-1-21/23

Fundamental Problems of Electrode Standardization For Arc Welding

current, possibility of welding in vertical or overhead position, etc. The classification of electrodes must be based upon the seam metal properties, as it is in principle adopted in GOST 2523-51. It is not the chemical composition that must be regulated but the properties of the weld metal, (not only standard but also special properties), such as stability at higher temperatures, durability, etc. With regard to the nomenclature of electrodes the author states that new types, such as E 100, E 120, E 130 and E 150 (table # 2) should be added to the GOST. He suggests completing the nomenclature by electrodes for the welding of high alloyed steels and alloys (including austenitic electrodes for perlite and martensite steel welding) and recommends in particular to produce electrodes of Kh20Ni10Cr6 and Kh15Ni25Cr6 types and also types yielding pure austenitic weld metals of Ni-5 type. It is necessary to strengthen the requirements of the mechanical properties of this group of electrodes, ensuring e. g. a toughness of not less than 5 to 6 kg/sq. cm at liquid nitrogen temperature. Electrode testing is to be based on the properties of weld metal which does not contain admixture of the basic metal. There are 3 tables.

1. Arc welding 2. Electrodes-Standards

Card 2/2

YEROKHIN, A.A.

24-1-23/26

AUTHORS: Yerokhin, A.A., Kitaygorodskiy, Yu. I., Kogan, M. G.,
and Silin, L. L. (Moscow).

TITLE: On the effect of ultrasonics on the character of
crystallisation inside a weld pool. (O vozdeystvii
kolebaniy ul'trazvukovoy chastoty na kharakter
kristallizatsii svarochnoy vanny).

PERIODICAL: Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh
Nauk, 1958, No.1, pp. 140-142 (USSR).

ABSTRACT: The results are described of some tests carried out
by the Institute of Metallurgy, Ac.Sc. USSR (Institut
Metallurgii AN SSSR) and the Scientific Research
Technological Institute (Nauchno-Issledovatel'skiy
Tekhnologicheskii Institut) on the effects of ultra-
sonics on the character of crystallisation of the metal
under welding conditions, paying particular attention to
welding of scale resistant austenitic steels for which
the problem of improving the structure is of particular
interest in view of their pronounced tendency to trans-
crystallisation. Typical welding equipment and standard
welding regimes were used. Automatic welding was
effected under flux, argon arc welding was effected by
means of a tungsten electrode of 5 mm dia. using as

Card 1/3

24-1-23/26

On the effect of ultrasonics on the character of crystallisation inside a weld pool.

metal
addition/4 mm wire of the alloy ~~3M~~-334. The oscillations in the metal were generated by means of a magnetostriction element which was rigidly connected to the transducer. The natural frequency of the mechanical system in the no-load state equalled 19.5 kc/sec, which varied as a function of the temperature of the metal, the dimensions of the bath and other factors, by 0.5 to 1.5 kc/sec when the bath was filled. The amplitude was about 35 μ . Preliminary calculations showed that such an amplitude ensures a kinetic energy which is adequate for influencing effectively the crystallisation of the weld joint. The power consumed by the transducer is 2 to 2.5 kW. Two methods of generating the oscillations are compared; in one the oscillations were transmitted to the bath through the base metal (Fig.1a), whilst in the other the oscillations were produced in the weld pool itself by means of direct submersion of the tip of the oscillating element into the molten pool. The second mentioned method proved more favourable. The carried out experiments proved the possibility of utilisation of ultrasonics for

Card 2/3

On the effect of ultrasonics on the character of crystallisation
inside a weld pool.

24-1-23/26

controlling the processes of crystallisation of the metal
of the seam during fusion welding.

There are 4 figures and 3 references - 1 Russian,
1 English, 1 German.

SUBMITTED: October 5, 1957.

AVAILABLE: Library of Congress.

Card 3/3

YEROKHIN A.A.

125-58-5-1/13

AUTHOR: Yerokhin, A.A.

TITLE: On the Question of the Investigation of Equilibrium in Welding
(K. voprosu ob issledovanii ravnovesiya pri svarke)

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 5, pp 3-11 (USSR)

ABSTRACT: The author considers different concepts of equilibrium in the metal-slag-gas welding systems. He concludes that equilibrium in welding is possible in principle, however, the incomplete experimental data available requires further study. The only known attempt to calculate the distance from equilibrium of the reactions in the metal-slag system, in welding with electrodes "TsI-1", was made by V.A. Lapidus in 1951 [Ref. 4] and [Ref. 29]. The author questions the conclusions of Lapidus, giving his own quantitative calculations of equilibrium for simple systems (with welding wire "Sv-08" and "simplified" coatings containing no ferro-alloys). The purpose of these calculations is not to provide a proof of the possibility of achieving equilibrium in welding, but to demonstrate in examples the possible methods of investigation.

Card 1/2

There is one table and 35 references, 29 of which are Soviet,

125-58-5-1/13

On the Question of the Investigation of Equilibrium in Welding

5 English, and 1 Italian.

ASSOCIATION: Institut metallurgii imeni A.A. Baykova AN SSSR (Institute of Metallurgy imeni A.A. Baykov of the AS USSR)

SUBMITTED: January 29, 1958

AVAILABLE: Library of Congress

Card 2/2

YEROKHIN, A. A.
~~Metallurgy~~

1860) PAPER I BOOK INFORMATION 807/2516
 Akademiya nauk SSSR. Zavodskiy mashinostroyeniye informatsii
 Metallurgiya SSSR, 1917-1971 (s. II) (Metallurgy in the USSR, 1917-1971; Vol
 2) Moscow, Metallurgizdat, 1979. 613 p. Errata slip inserted. 3,000
 copies printed.

Ed. (title page): I. P. Bardin, Academician; Ed. (inside book): G. V. Barynov;
 Tech. Ed.: P. G. Valentinov.

PURPOSE: This book is intended for metallurgists.

CONTENTS: The articles in this collection present historical data on the
 development of metallurgy, both ferrous and nonferrous, during
 the period 1917-1971. Advances in theory and practical application are
 thoroughly discussed. Many of the articles contain the present status
 of individual branches of metallurgy and give an idea of what may be
 expected in the future. Advances made in other countries are also
 discussed. The articles are accompanied by a large number of references.
 For further coverage, see Table of Contents.

Pinkhovich, Candidate of Technical Sciences; and A. G. Kilmov, Candidate
 of Technical Sciences. (Candidates of Metallurgy: I. A. Barynov, USSR
 Academy of Sciences) Achievements in Railroad Steel and Tire Production 101

Changes in engineering specifications and improvements in production
 techniques and quality of tires and solid wheels in the USSR since 1940
 are discussed. Further progress in this field is predicted.

Zislin, A. I., Professor, Doctor of Technical Sciences. (1970) Forging 113
 and Stamping Methods

This is a historical survey of developments in forging and stamping
 processes in Russia from pre-revolutionary times up to 1977.

Levin, I. I., Candidate of Technical Sciences. (Moscow Institute of Machine
 Design) Production of Castings 111

The paper traces the general course of development and discusses
 problems in the theory of casting, casting alloys, basic melting
 processes, molding and core materials, nonmetallic molds, special
 casting methods (permanent mold casting, die casting, continuous
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 mechanization, and automation.

Pol'ekin, M. Ye., Candidate of Technical Sciences; and G. V. Shumakov,
 Candidate of Technical Sciences. (Institute of Metallurgy: I. A. Barynov,
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This article is a general survey of the development and present state of
 powder metallurgy in the USSR. Theoretical and practical aspects of the
 preparation of compacted and sintered metal products are discussed.

Myalits, E. F., Corresponding Member, USSR Academy of Sciences; N. O. Ozer-
 alin, Professor, Doctor of Technical Sciences; A. A. Yerokhin, Candidate of
 Technical Sciences; and M. N. Shoroburov, Candidate of Technical Sciences.
 (Institute of Metallurgy: I. A. Barynov, USSR Academy of Sciences; and
 I. A. Barynov, USSR Academy of Sciences) Progress in the Science of Binding Metals
 in the USSR 194

The authors discuss the studies that have been made in the USSR of the
 theoretical aspects of binding, beginning in the latter part of the
 nineteenth century. Specific topics are: investigation of the arc,
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SOV/135-59-1-5/18

AUTHOR: Yerokhin, A.A., Candidate of Technical Sciences

TITLE: On the Computation of Electrode Coatings for Arc Welding (O raschëte pokrytiy elektrodov dlya dugovoy svarki)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 1, pp 16-20 (USSR)

ABSTRACT: The author discusses methods of computing the composition of electrode coatings for arc welding and stresses the necessity of studying the complicated phenomena connected with the oxidation and passage of alloying elements from the electrode into the weld metal. The qualities required of the weld metal depend on the control of the built-up metal composition, through selection of the proper electrode and additional alloying elements. A formula is given to calculate the coating according to the given weld metal and the coefficient of alloying element passage.

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SOV/135-59-1-5/18

On the Computation of Electrode Coatings for Arc Welding

Tests were performed for welding high-strength medium-alloy steels, which proved that for basic type electrodes the coefficient of alloying element passage does not depend upon the alloying element content in the electrode if there is a sufficient quantity of oxidizers, such as ferrosilicon and ferromanganese in the coating. Average coefficient values for different alloying elements are given. The author stresses the necessity of developing methods of calculating the coefficient of passage. Experimental data obtained in this field with the participation of A.V. Rudneva is given. There are 4 tables, 3 graphs and 6 Soviet references.

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SOV/135-59-1-5/18

On the Computation of Electrode Coatings for Arc Welding

ASSOCIATION: Institut metallurgii imeni A.A. Baykova AN SSSR
(Institute of Metallurgy imeni A.A. Baykov, of
the AS USSR)

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SOV/180-59-2-12/34
(Moscow)

AUTHORS: Yerokhin, A.A., and Petrunichev, V.A.

TITLE: Kinetics of the Fusion and Electrode-Metal Transfer Process in Arc Welding (Kinetika protsessa plavleniya i perenosa elektrodnogo metalla pri dugovoy svarke)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 2, pp 70-77 (USSR) (+ 1 plate)

ABSTRACT: In this investigation shadow cine-photography, with a type SKS-1 camera and a Jupiter II teleobjective was used to study the working zone in arc welding. A 3 kW lamp and a condenser were used for illumination, with red and blue-green filters to reduce arc brightness. The photography was carried out by LAFOKI. The active spot in the electrode and the arc flame are shown in Fig 1, while Fig 2 shows secondary effects. That changes occur with time is shown in high speed sequences in Figs 3, 4 and 5, illustrating respectively, the behaviour of a drop on the electrode, of metal being transformed by short-circuiting and of metal being transferred dropwise. The nature of the electrode-wire steel influenced the effects. X-ray photography showed that contrary to the views of V.A. Lapidus, the drops in transfer are not hollow (Fig 6).

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SOV/180-59-2-12/34

Kinetics of the Fusion and Electrode-Metal Transfer Process in Arc Welding

Arc length was found to be the main factor governing the form of transfer. The authors go on to discuss, on the basis of heat evolution, the kinetics of drop growth and transfer from electrode to seam. Although they could not determine directly drop weight from their photographs, they were able to deduce the rate of change of drop weight; and this, coupled with indirect determinations of initial drop weight, led to the weight vs time relation (Fig 7, Table 1). This confirmed that the rate of electrode melting decreases with drop growth and showed the irregularity of the whole process. Figs 8 and 9 show the distribution of drops with their time of existence for different currents and voltages, respectively. In their discussion of the effect of the nature of metal transfer on electrode melting they give some results of measurements with electrode vibration (Table 2) and show that this reduces the average drop-life and increase in the melting-coefficient value. Noting the predominating influence of current strength on productivity the authors give results of measurements of the main parameters for

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Kinetics of the Fusion and Electrode-Metal Transfer Process in Arc Welding

various welding conditions (Table 3, Fig 10). They discuss the influence of individual factors. There are 10 figures, 3 tables and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Institut Metallurgii AN SSSR (Institute of Metallurgy AS USSR)

SUBMITTED: December 1, 1958

Card 3/3

S/135/59/000/012/001/006
A115/A029

AUTHORS: Yerokhin, A.A., Candidate of Technical Sciences and
Kuznetsov, O.M., Engineer

TITLE: Electrodes With Oxidation-Free Coatings

PERIODICAL: Svarochnoye proizvodstvo, 1959, No. 12, pp. 1- 4

TEXT: In order to find out electrode coatings with the greatest possible oxidation stability, two series of tests were carried out. Tests of a mixture of CaCO_3 and CaF_2 proved that the oxidizing process decreases with an increase in CaF_2 content. Therefore, elimination or a substantial reduction of CaCO_3 is required. It has been found that also SiO_2 and MnO should be reduced to a minimum. In the second series of tests, the influence of alloy components on slag was tested. In one group coatings of equal CaCO_3 and CaF_2 contents with variable admixtures of quartz sand were applied, in another group coatings made of titanium dioxide were tested. Another series of tests had to establish conditions and intensity of reduction of silicates. In general, the problem of finding out suitable oxidation-free coatings, meets with difficulties. Scores of experiments were made to find out that the technological fitness of electrodes depends on

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A115/A029

Electrodes With Oxidation-Free Coatings

many factors. In principle, the best composition should be (in proportion of weight): fluorspar 70 - 85, marble 10 - 20, titanium dioxide 5 - 10. On this basis, two types of oxidation-free electrodes have been developed: VMET-3 (IMET-3) for welding of low-alloyed carbon steels; VMET-4 (IMET-4) for welding of chrome-nickel steels. There are 6 graphs, 4 tables and 5 Soviet references. ✓

ASSOCIATION: Institut metallurgii im. A.A.Baykova AN SSSR (Institute of Metallurgy imeni A.A.Baykov, AS USSR)

Card 2/2

DERYAGIN, Georgiy Aleksandrovich; KOSHILIN, G.M., inzh., retsennent;
YEROKHIN, A.A., kand.tekhn.nauk, retsennent; KONDRATOV, A.S.,
kand.tekhn.nauk; KONOHOV, L.A., dotsent, kand.tekhn.nauk, red.;
TOKAR', V.M., red.; GARMUKHINA, L.A., tekhn.red.

[Using technological methods for increasing the durability of
machine parts] Povyshenie vysochivosti detalei mashin tekhnolo-
gicheskimi metodami. Moskva, Gos.nauchno-tekhn.izd-vo Oborongiz,
1960. 202 p. (MIRA 13:11)
(Machine-shop practice)

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S/137/62/000/001/091/237
A052/A101

AUTHOR: Yerokhin, A.A.

TITLE: The consideration of the arc-to-workpiece heat transfer characteristics in the calculation of the fusion zone dimensions

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 1, 1962, 5, abstract 1E23
(V sb. "Protsessy plavleniya osnovn. metalla pri svarke", Moscow, AN SSSR, 1960, 101 - 116)

TEXT: - The possibilities of utilizing the scheme of a high-speed point heat source, moving over the surface of a semi-infinite body, for calculating the fusion zone dimensions at the arc welding and the effect of the arc-to-workpiece heat transfer conditions on the value of η_{eff} and β coefficients are evaluated. It is shown that the calculation provides satisfactory results under condition that empirical correction coefficients are introduced into the calculation equations, either to the effective arc heat power or to the thermal efficiency of the fusion process. These coefficients can be assumed constant or variable by the linear law, depending on the welding parameters which determine the arc-to-workpiece heat transfer conditions. A deconcentration of the arc heat due,

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A052/A101

The consideration of

for example, to the formation of a large molten metal layer under the arc base, causes a decrease of the power coefficient. On the contrary, when the heat flow concentration increases, or when the arc is deepened into the workpiece, this coefficient increases. X.

V. Tarisova

[Abstracter's note: Complete translation]

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S/194/61/000/003/041/046
D201/D306

AUTHORS: Silin, L.L. and Yerokhin, A.A.

TITLE: The effect of ultrasonic waves on the crystallizing metal of a welding tank

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 3, 1961, 20-21, abstract 3 E145 (V sb. Kristallizatsiya metallov, M., AN SSSR, 1960, 176-179)

TEXT: Two methods have been compared of exciting elastic oscillations in the metal of a welding tank: 1) by the intermediary of the basic metal and 2) directly in the liquid metal so as to obtain the required structure of the seam. The analysis is made using steel CT.3 (ST.3) 18 mm thick and 1 x 18 H9 (1 x 18 N9) 5 mm thick. A magneto-strictive head with a capacitor was used to obtain ultrasonic waves (frequency 19.5 Kc/s, power consumption up to 3 kw). The first method used shows that seams obtained with irradiation have a tendency to form cracks. The method of introducing ultra-

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The effect of ultrasonic waves...

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D201/D306

sonic waves into the liquid metal (the concentrator is placed together with the welding electrode and moves in synchronism with it) makes it possible to obtain good seam structure. [Abstracter's note: Complete translation]

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18(7)

SOV/125-60-1-2/18

AUTHORS:

Yerokhin, A.A., Balandin, G.F., Kodolov, V.D.

TITLE:

The Influence of Supersonic Oscillations on the Crystallization of the Seam in Electroslag Welding

PERIODICAL:

Avtomaticheskaya svarka, 1960, Nr 1, pp 15-20 (USSR)

ABSTRACT:

In the welding laboratory of the Institute of Metallurgy imeni A.A. Baykov AS USSR experiments are being conducted on the possibility of using ultrasound in welding, particularly in the electroslag welding of chromo-nickel austenite steels. Two methods of introducing ultrasound into the molten pool have been tested: directly with the aid of a waveguide (Figure 1) and by means of a wire passing through a special slip device in a steel resilient oscillations waveguide linked to a magnetostrictive vibrator (Figure 2). Both methods are discussed in detail and compared. The experiments proved that ultrasound can be used to influence the crystallization process of the metal in the electroslag seam.

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SOV/125-60-1-2/18

The Influence of Supersonic Oscillations on the Crystallization of the Seam in Electroslag Welding

Depending on the grain size of the chromo-nickel austenite weld metal (steel "Kh25N20" and alloy "Kh20N80") its durability can be increased by 15 to 20% (when the grain is very fine), or lowered by 25 to 30%. Electroslag seams welded with "Kh-25N20" and Kh-20N80 wire with use of ultrasound are less liable to form heat-cracks. There are 2 diagrams, 6 photographs and 2 Soviet references.

ASSOCIATION: Institut metallurgii im. A.A. Baykova AN SSSR (Metallurgical Institute imeni A.A. Baykov AS USSR) ✓

SUBMITTED: July 14, 1959

Card 2/2

18.7200

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S/180/60/000/01/004/027
E111/E135

AUTHOR: Yerokhin, A.A. (Moscow)

TITLE: Kinetics of Oxidation-Reduction Reactions in Welding

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 1, pp 36-43 (USSR)

ABSTRACT: The author notes that little research has been done on the kinetics of the reaction of metal with gas and slag during welding, most being devoted to the "statics". He attempts to evaluate the role of kinetic factors in metal oxidation during welding, discussing first the possible sources of oxidation. Under modern conditions these are mainly the coatings, fluxes and technical-grade inert gases used for protection from air, which can all oxidize the metal. When the flux has a sufficiently low oxygen content oxidation/reduction processes can occur between metal and slag. Kinetic considerations had to be brought in to explain the oxidizing effect of the silicon-reduction process (Ref 4). The present author has demonstrated the relative unimportance of air when welding with a coated electrode by comparing the percentage of each alloying element oxidized in air or in helium for

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Kinetics of Oxidation-Reduction Reactions in Welding

a (marble + fluorspar) and a fluorspar coating (Table 1): the amount of oxygen used in oxidation is reduced by helium only with the fluorspar coating. In his discussion of conditions for oxygen supply to the reaction and the extent of metal oxidation by slag and gas the author considers two extremes: oxidation by highly ferruginous slag; oxidation by air or CO₂. For the first, experiments were made in which changes in metal composition when remelted with simple coatings of hematite, marble and some other components were determined. Table 2 shows losses from and oxygen content in the metal for welds of types Sv08, Sv15, Sv18KhMA, Sv18KhGSA and Sv0Kh18N9 wire coated with hematite or bare. The author discusses briefly the thermodynamics of the processes, taking the activities of FeO in slag and oxygen in iron to be proportional to their concentration by weight. For considering the second extreme data (Table 3) were obtained on oxidation when welding in a CO₂ atmosphere (N.M. Novozhilov) and with electrodes coated with 80% marble, 20% fluorspar. Discussing the kinetics of the oxidation reaction, the author considers

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Kinetics of Oxidation-Reduction Reactions in Welding

diffusion of oxygen and of the components being oxidized and reaction-rate factors (assuming a first-order reaction). When concentration of the element is small the reaction rate is proportional to it; at high concentrations the controlling factor becomes oxygen supply and not element concentration (Fig 1a) and with different oxygen-feed rates but otherwise similar conditions it is possible to obtain different times for oxidizing an element to a given concentration (Fig 1b). A similar result was obtained by Filippov (Ref 10). For oxidation by slag the effective feed-rate of oxygen to the reaction varies. A further complication arises when the element is contained in the covering or flux in the form of a fine powder; experiments by A.M. Bykov have shown that the degree of oxidation of manganese in a CaCO_3 -Mn mixture depends both on the mixture composition (but only up to a limit of CaCO_3/Mn) and the particle size when welding with material forming sufficient highly ferruginous slag. The oxygen concentration in the metal approaches the equilibrium

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